REMARKS

The amendments to the specification are intended to make it more consistent with the language of the claims.

The amendments to claims 2 and 7 correct the dependencies of these claims, and changes the language to be consistent with the language of the claims from which they now depend. Claim 9 has been amended to more closely correspond with common terminology. Claim 14 is supported by claim 2. Claim 15 is supported by claim 4. Claim 16 is supported by claim 3. Applicants submit that these new claim do not add any new limitations, but rather only include the limitations of the claims by which they are supported. No new matter has been added.

Applicants would like to thank Supervisory Examiner Teska, Examiner Hugh Jones, and Examiner Thangavelu, for the courteous and helpful discussion help with applicants' representative on June 16, 2004. During this discussion, applicants' representative noted that Chang et al. do not describe simulating a mask, but rather only simulating the image of the mask (i.e. the photoresist pattern with would result from using the mask). Changes to the claims were also discussed.

In the manufacture of integrated circuits, patterns in photoresist layers are produced by exposing the photoresist through a mask or reticle. The image of the mask produced on the photoresist, is distorted due to, for example, light refraction effect. These effects may be simulated, allowing the mask to be adjusted (for example, by the inclusion of serifs), so that the pattern produced on the photoresist more closely corresponds with the desired layerout. This process, however, assumes that the mask itself is an ideal reproduction of the drawn pattern or layout. But the mask making process is similar to the process used to form photoresist patterns, and therefore the actual mask will also be distorted from the drawn layout.

The present invention includes simulating a mask, from a drawn layout. By examining this simulated mask, especially when the simulation takes into account proximity effects and resolution due to spot size, the drawn layout may be adjusted to produce a mask that will give a more accurate photoesist pattern.

The rejection of the claims under 35 U.S.C. 102 and 103, over Chang et al., alone or in combination with Pati, has been obviated by appropriate amendment. All the claims now depend (directly or indirectly) from claim 9.

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The rejection of the claims under 35 U.S.C. 103, over <u>Chang et al.</u> in view of <u>Tsukuda</u>, and optionally in combination with <u>Pati</u>, is respectfully traversed. <u>Chang et al.</u> simulate photoresist patterns (i.e. the image produced from a mask), but do not produce a simulated mask from a drawn layout including simulating proximity effects; errors introduced during the mask making process are not considered.

<u>Chang et al.</u> describe a design rule checking system and method. Described is that a mask pattern may be adjusted to compensate for distortions (from, for example, proximity effects) in the image produced on a photoresist (see, for example, col. 3, lines 35-43 and col. 4, lines 30-47). These procedures begin with an original mask design that is the ideal layout (col. 4, lines 34-38). The mask design is then adjusted to minimize the distortion in the photoresist pattern. However, there is no discussion about, nor suggestion that, the mask itself is not the same as the ideal layout; there is no suggestion to adjust the drawn layout of the mask to take into account distortions from the mask making process. Please note that the only simulation discussed is simulation of the *image* of the mask, never a simulation of the mask itself that considers errors introduced during the mask making process (see, for example, col. 17, lines 37-60).

<u>Tsukuda</u> has been cited for comparison of a simulation with a layout, and correcting the layout. <u>Pati</u> has been cited for elements in dependent claims. There is no suggestion to produce a simulated mask from a drawn layout including simulating proximity effects; there is no suggestion to adjust the drawn layout of the mask to take into account distortions from the mask making process.

The present invention includes simulating a mask from a drawn layout, wherein the simulating comprises simulating proximity effects. This allows distortions from the mask making process to be taken into account, and these distortions minimized by adjusting the drawn layout of the mask. The applied references never suggest such simulation and correction -- they assume that the actual mask is an ideal reproduction of the drawn layout. The claimed invention is neither anticipated by, nor obvious over, the applied references. Withdrawal of these grounds of rejection is respectfully requested.

The objections to the title and specification have been obviated by appropriate correction.

Drawing corrections will be submitted within three months of the mail date of the office action.

Applicants submit that the application is now in condition for allowance. Early notice of such action is respectfully requested.

Respectfully submitted,

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